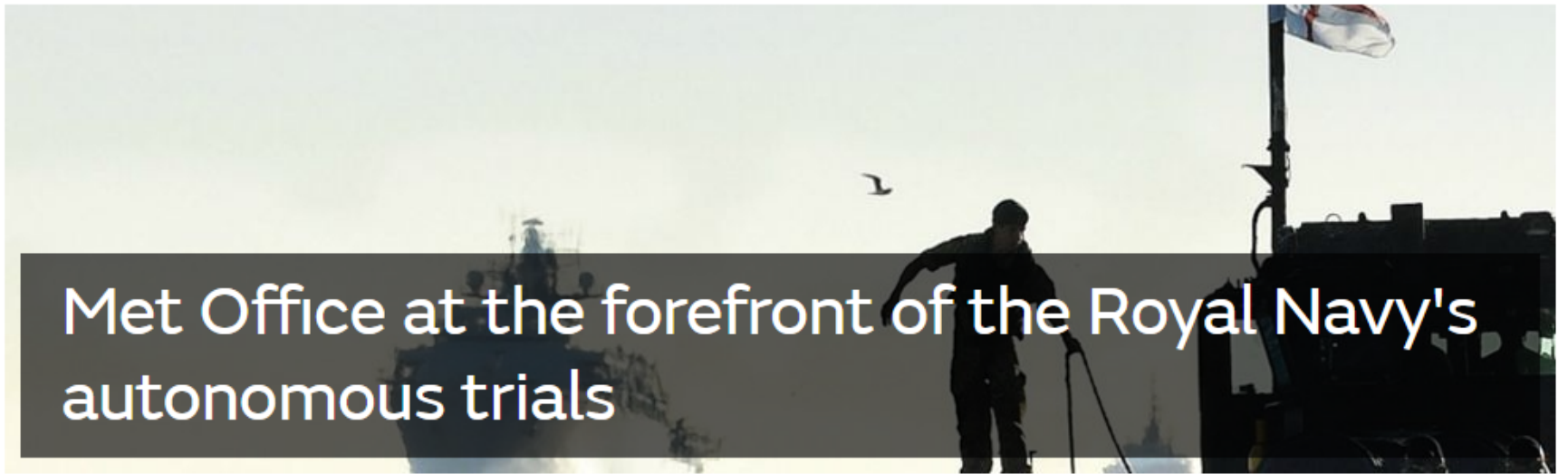




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The Met Office Defence Science & Technology team is providing detailed weather and oceanography forecasting used to support Exercise Unmanned Warrior.

As over 40 companies showcase their innovative unmanned systems to the [Royal Navy](#) , the Met Office is providing critical forecasting and capitalising on the environmental data captured by the next generation of technology.

The large scale exercise taking place in the waters around western Scotland in October will benefit from operational forecast information provided by the Met Office through the [Joint Operational Meteorology and Oceanography Centre](#) (JOMOC).

In addition, specialised oceanography data is being provided to help identify the different patterns of water movement known as fronts and eddies which are common in these coastal waters. Combined this information will improve the effectiveness of the exercise and allow the industry demonstrators and the Royal Navy to get the most out of the two week trials.

In advance of [Unmanned Warrior](#) , ten marine robots conducted trials as part of a separate exercise coordinated by the [National Oceanography Centre](#) (NOC). Seven submarine gliders and three surface Wave Gliders worked together in fleets to collect a range of environmental data as part of the Marine Autonomous Systems in Support of Maritime Operations (MASSMO) programme, a series of joint academic and industry trials. The concept is to push the limits of both the capability of unmanned vehicles and the rapid exploitation of data that they provide.

Colin Chapple of the Met Office has been the main coordinator with the Royal Navy. His role included facilitating the use of a very high resolution research atmospheric model over the area and ensuring that the data the gliders are collecting on ocean temperature, salinity, oxygen, turbidity, near-surface weather conditions, ocean currents, water depth, and the abundance of plankton, is passed back to the Met Office.

This data is fed into Exercise Unmanned Warrior to inform their operations and also into the [Met Office Defence Ocean Science](#) team where it is being used to verify ocean modal data. The science therefore goes full circle as the environmental data collected is used to validate and improve the models that inform the oceanography forecast which is being provided by the Met Office for the exercises.

Philip Beauvais from the Met Office Defence Ocean Science team explained "As there is very little information about the seas in general, models are used to understand where features such as fronts and eddies are located. The data gathered by the gliders in this exercise then helps us verify the quality of the model results."

The Met Office works closely with the Armed Forces providing meteorological, oceanographic and climate science understanding to deliver optimum defence advantage on operations and in peacetime.